Avoiding A Carbon Crash:

HOW TO PHASE OUT COAL AND STRENGTHEN THE EU ETS

Policy briefing, September 2019

Contents

Executive summary

12 European countries have committed to closing down coal-fired power plants over the coming years. In order to do their part in limiting the global temperature rise to 1.5°C above pre-industrial levels, all EU countries will have to follow on this path and phase out coal by 2030[1]. While this is an urgent and needed measure, it could also have a significant negative impact on European climate action by weakening the EU Emissions Trading System (EU ETS).

One of Europe's main climate tools, the EU ETS caps greenhouse gas emissions from Europe's industry, power and aviation sectors. Without further action, countries could continue to auction pollution permits for power plants which are no longer in use. This could lead to 2.22 billion excess permits (representing 2220Mt CO2e) entering the EU carbon market between 2021 and 2030. By 2040, this 'coal bubble' will have grown to 6.18 billion permits. This is likely to send ETS prices crashing, following last year's recovery after a decade of ineffective price levels.

The EU ETS Market Stability Reserve (MSR) recently began to absorb excess allowances off the market which is the main reason for the recent price hikes. However, the MSR alone will not be sufficient to deal with the new surplus that follows from coal plant closures. The MSR should, therefore, be significantly strengthened through the legislative reform process set to take place by 2021.

The latest EU ETS reform gives governments the possibility to unilaterally cancel emission allowances as coal power plants are taken off the grid. Together with strengthening the MSR, this will be key to ensure that the coal phase-out does not lead to another massive surplus flooding the market, thereby depressing the price and reducing the incentive to cut pollution.

Finally, the EU ETS alone will not set sufficient incentives for a full fuel switch from coal and lignite to gas, let alone a transition to 100% renewable energy which should be the ultimate objective for the European power sector. In order to drive a rapid phase-out of coal while at the same time ensuring the effectiveness of Europe's carbon market, EU Member States should agree to significantly strengthen the market stability reserve, cancel the surplus allowances resulting from the coal phase-out, and adopt complementary policies to phase out all fossil fuels from the European power sector.

Key policy recommendations:

The EU Commission should propose to:

- Increase the MSR intake rate to 36% from 2024 onwards
- Adopt a declining threshold for the MSR to improve its effectiveness
- Set an automatic cancellation for allowances held in the MSR for more than five years
- Broaden the scope of article 12.4 of the revised ETS directive to allow national cancellation of allowances reflecting the closure of any ETS installation
- Increase the Linear Reduction Factor (LRF) to 4.2%

EU Member States should:

- Adopt a coal phase-out plan to stop burning coal and lignite for electricity by 2030
- Commit to cancelling allowances in line with the closure of power plants

1 *Climate Analytics, https://climateanalytics.org/briefings/coal-phase-out/*

Part 1: The European Union's Emissions Trading System (EU ETS)

1.1 What is the EU ETS and how does it work?

The EU Emissions Trading System (EU ETS) limits the quantity of CO_2e emitted by companies across the EU. It does so by distributing a certain number of pollution permits ("allowances") to each factory, power plant, and airline (called "installations"). Each company has to give one allowance back to the government for every tonne of CO_2e it has emitted, and allowances can be traded between companies. In theory, this ensures that those companies with the cheapest abatement cost invest the most in emission reductions because they will choose to reduce their emissions and sell their allowances to companies for whom it is more expensive to cut pollution[2].

1.2 A brief overview of the EU ETS' four phases

1.2.1 2005 - 2020: The first three phases

In the first testing phase of the EU ETS (2005-2007), many more allowances were made available than what was actually necessary. As a result, prices collapsed to zero at the end of the period because it was not allowed to use existing allowances for the second period (which means that there was no demand for them anymore).

At the start of phase 2, in 2008, prices initially reached 30€/tCO_2e, but the slowdown in EU industrial production as a result of the global economic downturn of 2008 meant that emissions also decreased and demand for allowances collapsed together with the prices. This was reinforced by the fact that many companies purchased cheap international credits to "offset" their emissions instead of using allowances. This practice will be banned starting in 2021.

All allowances under the EU ETS were allocated for free until 2013, when auctioning was introduced for the power sector. This meant that electricity producers had to start purchasing their allowances from national governments. This helped raise some public revenues while enforcing the polluter pays principle, but with prices dropping below 5€/tCO_2e, the incentive to reduce emissions was very weak.

Several design flaws have contributed to the low prices and the failure of the EU ETS to effectively drive emission reductions.

High cap and surplus

In the initial phase, the EU ETS cap did not decrease, but it was lowered between phases 1 and 2. Since phase 3 (2013), an annual reduction of 1.74% has been built into the system for both free allocation and auctioning. Until 2014, more allowances were released each year than tonnes of CO_2e were actually emitted, which means that unused allowances were accumulating in the market[3]. At the start of phase 3, there were 2.1 billion surplus allowances[4] (which is more than all of that year's ETS-covered emissions) in the market. Between 2014-2016, the auction volume was reduced through a measure known as "backloading", but in 2018 there was still an oversupply of 1.7 billion allowances[5]. These figures show that there has always been a big oversupply of available allowances, which is one of the reasons why the prices have remained low and the EU ETS has not significantly driven emission reductions.

Excessive free allocation

As explained above, historically, most permits have been given away for free. During the first two phases, there were more freely allocated permits each year on the market than there were emissions.

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2 *For more information about the ETS and how it works, see our introductory guide here and our analysis of the latest reform here*

3 *EEA, Emissions Trading System data viewer*

4 *European Commission (2018): "Report on the functioning of the European Carbon Market" (p.29)*

5 *European Commission (2019), Publication of the total number of allowances in circulation in 2018 for the purposes of the Market Stability Reserve under the EU ETS*

Free allocation is supposed to help avoid so-called carbon leakage, a theoretical situation where industries faced with a carbon price would relocate their activities to other countries where there is no such regulation in place. However, this has always remained a theoretical argument, spearheaded by industry lobbying. In practice, no carbon leakage has been detected due to the EU ETS[6], and the carbon market has not damaged firms' profitability[7]. In fact, most big polluters under the EU ETS have made large profits from the system[8]. Also in the future carbon leakage is unlikely to pose a real problem for energy-intensive industries, even with much higher carbon prices than today[9].

From the start of phase 3, free allocation was scaled down, to slightly less than half of all ETS emissions. However, industry still receives more than 90% of their pollution permits for free. Since the free allocation of permits is based on historical emission levels (so called "grandfathering"), the more a company polluted in the past, the more it is cashing in from the ETS.

It was not until 2018 when the latest reform of the EU ETS legislation was concluded (see next section) that the prices recovered above 10€/tCO_2e. Today (autumn 2019), they hover around 25€/tCO_2e, which is still insufficient to incentivise the emission reductions necessary to meet the 1.5°C objective of the Paris Agreement[10].

1.2.2 2021 - 2030: The next phase of the EU ETS

In an effort to improve the system and address low prices, the market was reformed for its fourth phase, which starts in 2021. The reform included several significant changes aiming to reduce the oversupply[11], of which two are of particular importance in the context of the coal phase-out.

First, an important new tool, the Market Stability Reserve (MSR) was established to control the number of allowances in circulation on the market. Although the MSR had been agreed before the ETS phase 4 reform, it was strengthened on this occasion. Each year, the MSR will absorb 24% of ETS allowances in circulation, by reducing the number of allowances auctioned by Member States, and placing these allowances in a "reserve". As long as the oversupply remains above 833 million allowances, the MSR will absorb some of them. If the supply falls below 400 million, it will release 100 million allowances. After 2023, the intake rate might be lowered to 12%, unless otherwise decided during a reform scheduled for 2021. Also starting in 2024, allowances held in the reserve which are in excess of the previous year's auctioning volume will be cancelled permanently. This could lead to the cancellation of around 1.1 billion allowances already in the first three years[12]. Combined with the increased rate at which the cap will sink every year (2.2% annually from 2021, instead of the current 1.74%), this is expected to significantly improve the ETS's effectiveness, by reducing the number of allowances on the market and hence pushing prices upwards. Expectations of this have already translated into a price rise of over 300% in 2018 alone.

The second major change in the ETS rules impacting the coal phase-out is the decision to allow Member States to unilaterally cancel allowances in line with the closure of power plants. As countries close down their coal or lignite fired power plants, emissions in the country decrease, which means that some allowances are no longer needed. If these are auctioned nonetheless, they will be bought by other companies which will allow these companies to increase their emissions. Even if the MSR limits some of this effect by absorbing surplus allowances (see above), the emissions from the closed power plants will partially shift to another plant or

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6 *Dechezleprêtre et al. Stoerk (2019) «Searching for Carbon Leaks in Multinational Companies» Working Papers 97, Queen Mary, University of London, School of Business and Management, Centre for Globalisation Research.*

7 *OECD (2018): "The joint impact of the European Union emissions trading system on carbon emissions and economic performance" available here*

8 *Regulated companies made a profit of over €25 billion, see more here*

9 *Sato et al. (2015), Energy Economics, Asymmetric industrial energy prices and international trade*

10 *The High-level commission on carbon pricing recommends a price of 40-80$/tCO2e today, rising to 50-100$/tCO2e in 2030*

11 *For a more detailed description of the reform, see our briefing "Beyond the EU ETS: Strengthening Europe's carbon market through national action"*

12 *Powering Past Coal Alliance, 2019, The EU ETS back in the spotlight*

country instead of truly disappearing. This is called "the waterbed effect". To prevent this, the revised ETS rules allow countries to "cancel allowances from the total quantity of allowances to be auctioned[,] up to an amount corresponding to the average verified emissions of the installation concerned over a period of five years preceding the closure"[13].

1.3 Outlook for the EU ETS

Since its start in 2005, the EU ETS has already seen three major revisions. But as trading phases keep extending, it is important to ensure that regular revisions of specific aspects of the market are scheduled.

1.3.1 Reviewing the Market Stability Reserve by 2021

First of all, as mentioned above, the MSR will be reviewed, and potentially improved, in 2021 at the latest. The MSR started operating in January 2019, and while the market surplus had already fallen from 2.1 billion (2013) to 1.65 billion (2018), the existing volume of available allowances is still sufficient to cover 95% of the annual ETS emissions.

Currently, the MSR's intake rate is scheduled to drop from 24% to 12% in 2024, which coincides with an increasing number of coal power plants being taken off the grid as part of national coal phase-out plans. It is therefore expected that, should the MSR remain unchanged during its 2021 review, allowances could start flooding the market again from 2024. A significant strengthening of the MSR is therefore required, as per our recommendations in section 3.2 below.

1.3.2 The global stocktake and the EU ETS in 2023

In 2023, countries will assess global progress towards reaching the Paris Agreement climate goals. This "global stocktake", which is repeated every five years, is set to inform the process of increasing ambition every five years whereby governments submit higher targets under their Nationally Determined Contributions (NDCs).

As part of this stocktake, the European Commission will have to assess the ETS' compatibility with the 1.5°C target. Currently, the two are not aligned, which means that the ETS should be revised before 2023. To set the ETS on a Paris-compatible trajectory, the rate at which the number of available allowances decreases annually (the Linear Reduction Factor, LRF) should be increased to 4.2%. This will also be necessary in order for Europe to be on a pathway to net-zero emissions by 2040[14].

Given both the European Commission's long-term climate strategy, and the Paris Agreement's objective to which all EU countries have committed themselves, it is important to maintain investor confidence and stability in the system by adopting as soon as possible the measures necessary to reach these objectives.

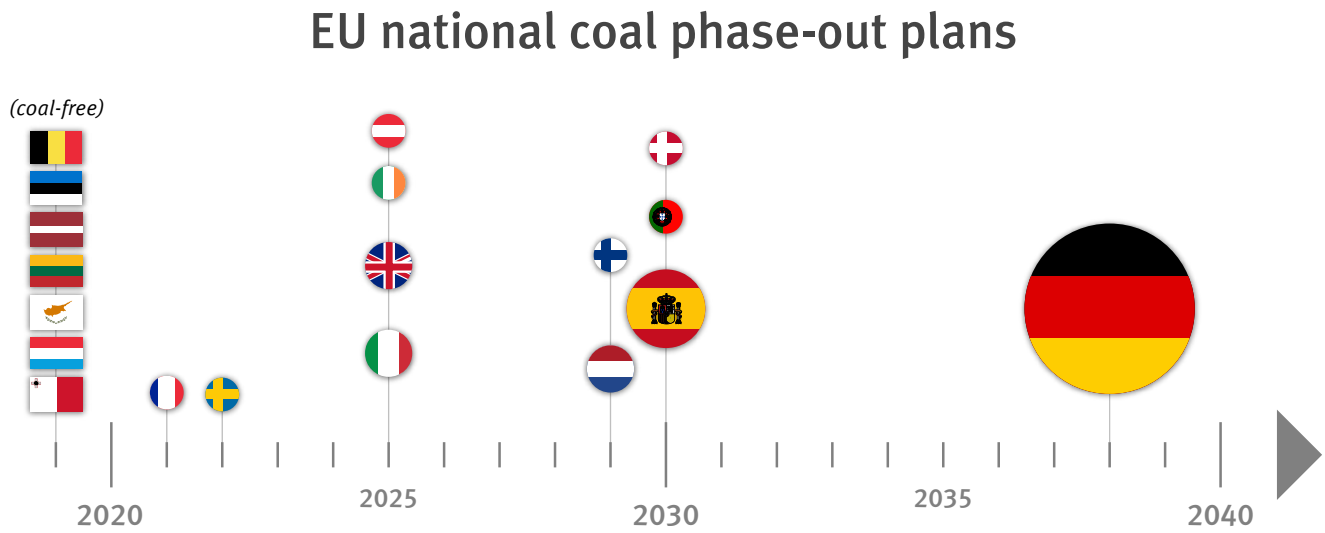
13 *Article 12.4 of the revised ETS directive can be found on the European Commission's website*

14 *See this presentation for more information*

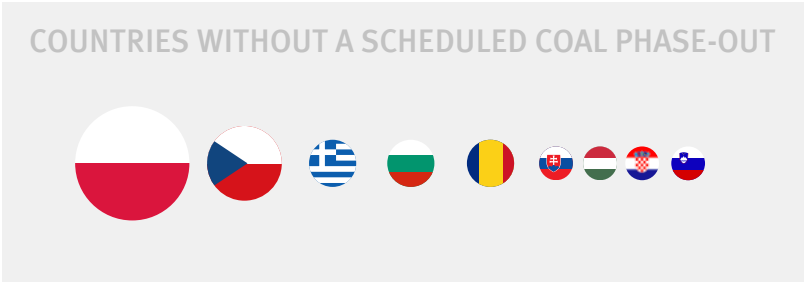
Part 2: The EU ETS' contribution to the coal phase-out

2.1. The European coal phase-out

Phasing out coal in Europe is a priority if countries are to reach their climate targets. Several EU Member States have already committed to doing so, including Germany which is currently the EU's largest emitter of CO_2 from coal (in absolute terms). In addition to the 12 countries which have planned a full coal phase-out[15], our analysis covers one plant which is scheduled to be closed in Slovakia in 2020.



The size of each bubble is proportional to the country's emissions from coal.



Although several countries still have not adopted phase-out dates, the impact on emissions of planned coal phase-outs in the EU will be massive. Total emissions from coal power plants in countries with a scheduled coal phase-out were 388MtCO_2e in 2017. Over the fourth phase of the EU ETS (2021-2030), a full 2.22GtCO_2e could be avoided as a result of ending the use of coal for electricity generation.

2.2 Can the EU ETS deliver the end of coal?

The objective of the EU ETS is to reduce emissions in a cost-effective manner. This is particularly relevant for the price of carbon pollution in the power sector, where each installation must purchase its allowances through auctions[16]. The EU ETS' contribution to the coal phase-out hence largely depends on the impact of the carbon price on the profitability of investing in coal power plants, and running them. In the context of the European coal phase-out, the most relevant decision is the latter: deciding whether or not a company should run an existing power plant.

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15 *There is some uncertainty around Spain's coal phase-out. While the country has not officially communicated a deadline for taking its last coal power plant offline, it has made it very clear in its National Energy and Climate Plan (NECP), as communicated to the European Commission in early 2019 that it intends to phase out coal by 2030. We have adopted this as a phase-out date for our analysis.*

16 *Except for certain countries in the Central and Eastern European region which benefit from exemptions under Article 10c of the ETS directive*

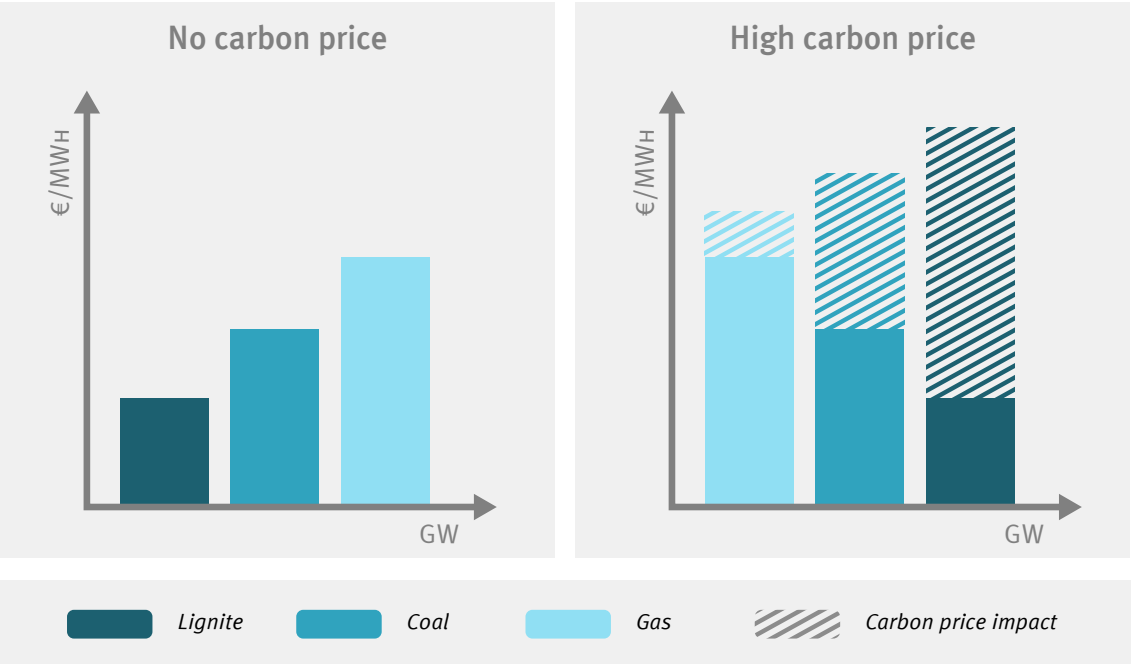
The below analysis focuses on short-term prospects and does not consider the impact of the EU ETS on investments in renewable energy and/or saving energy. In the long term, this is of course the key component of a successful coal phase-out. But in the short term, on a day-to-day basis, the EU ETS affects whether or not an existing power plant will operate. Given that renewables have no carbon cost to bear, there is no day-to-day impact of the EU ETS on the operation of renewable energy installations (i.e. they produce electricity when wind or sun is available). Rather, it will be the long-term trend in the profitability of fossil fuels which will affect investments in renewable energy.

This section focuses on whether the EU ETS is effective in incentivising a fuel switch from coal to gas on a day-to-day basis. This does not imply that such a fuel switch would be sufficient to meet the EU's climate objectives, for which a full evolution to 100% renewable energy is required.

An important question, therefore, is what price level in the EU ETS would incentivise a significant fuel switch from coal to gas? One useful indicator is the merit order of electricity generation, which compares the cost of producing one more unit of electricity (i.e. the marginal cost) to the price at which it can be sold. It is akin to comparing what is the needed price of electricity for various power production plants, in order for a plant to make neither profit nor losses. Various plants are compared and ranked according to the price they need to "cut even" on their costs, and this creates the merit order. Since coal is more carbon-intensive than gas, an increase in allowance prices will eventually lead to a switch in the merit order from coal to gas, if the allowance prices are high enough.

Taking the example of Germany, it appears that fuel switching would only start if allowance prices were to reach around 60€/tCO_2e in 2030, and even at 90€/tCO_2e most coal-powered plants would still be turned on before gas-fired ones[17].

Impact of the carbon price on the merit order of electricity generation



These graphs show which price of electricity is required for a given plant to be economically viable. As the carbon price increases, less carbon-intensive plants become more attractive. With a high enough carbon price, gas plants can make a profit even at low electricity prices, relative to what coal plants require, and this will create a fuel switch.

17 *Böing et al. (2018): "CO2 preis Vs. Kohleausstieg", available here*

The fact that such high prices are required to incentivise fuel switching in Germany shows why supplementary policies, and a government-mandated coal phase-out, are not only useful but also necessary. On its own, given the current and expected economic and political parameters, the EU ETS cannot and will not deliver a full coal phase-out and a switch to 100% renewable energy across Europe.

However, the EU ETS still has a role to play in supporting the coal phase-out. First, the example above is one of the most extreme ones, because Germany has access to a lot of cheap coal and lignite, which helps to make plants profitable. Looking at the UK, which does not have such easy supply, carbon pricing has had a much bigger impact. The UK is a good example because it has a carbon price floor[18] of 18£/tCO_2e in place to complement the EU ETS, which means that coal power plants have been under much heavier financial strain. Between 2012 and 2017, coal's share in the UK electricity generation fell from 42% to 7%. While this cannot be attributed to carbon pricing policies alone, they certainly had a significant impact. At the same time, the UK is also an example of how subsidies can keep unprofitable power plants running, because the government is locked into long-term power purchase agreements. In September 2019, the power company EDF Energy is set to close a 50-year old coal-fired power plant, coinciding with the end of government subsidies for this plant[19].

Overall, the EU ETS' contribution to the coal phase-out is far from negligible, especially in recent years. While it is not sufficient on its own, carbon pricing contributes to making power plants less profitable, and this also means that less state compensation is necessary for plants which are forced to be taken off-line as a result of a government-mandated coal phase-out. Here, it is important to make the distinction between supporting coal-dependent regions and workers to embark on a just transition on the one hand, and channeling public money to investors and shareholders who have gambled on the future of this high-carbon industry on the other hand. The first can and should be done in part with revenues from the ETS auctions, and the latter can be avoided with carbon pricing policies.

2.2.2 Measuring the EU ETS' impact on coal power plants

The merit order of electricity generation has the great advantage of allowing a comparison between all plants in a given area. However, its drawback is that it assumes many parameters which influence a plant's profitability are held constant. In other words, it shows, for any given plant, the price of electricity needed for this plant to break even, holding all other parameters constant. Another informative indicator, which tracks real profitability much more closely, is the "spread" of a given type of fuel. The spread provides an estimate of the profit margin of running a typical coal or gas plant over a certain period of time, but does this for an estimated "typical" plant, rather than for each plant in a country[20].

In other words, the merit order of electricity generation compares the profitability of many plants at a specific point in time, while the spread relates to the profitability of one single "typical" (approximated) plant over time.

Under the EU ETS, power plant operators have also to consider the cost of emission allowances, and the "clean spread" is calculated as follows:

Profitability = money earned from electricity – money paid for fuel and emissions

18 *See "carbon price floor and the price support mechanism" from the House of Commons Library*

19 *Carbon Pulse, 2019, UK edges closer to coal exit as EDF Energy flags closure of Cottam plant*

20 *One could technically estimate the spread for a single plant, but some parameters which affect the spread are confidential data (e.g. plant-level efficiency), and hence public data of the spread are always based on certain estimations.*

The clean spreads in detail

When it comes to the coal phase-out, and the short-term perspective for leaving coal power production behind, the most useful metrics are the clean dark spread (CDS) and the clean spark spread (CSS). The former is the measure of profitability of running coal power plants, the second is that of running gas power plants under the EU ETS. If the clean dark spread sinks below the clean spark spread, it means that it becomes more profitable to run gas-fired power plants, compared to the coal-fired ones. Note that this is a short-term consideration, potentially on a timescale as short as an hour.

The full formula to calculate the clean dark and clean spark spreads used in this report is:

$$\textit{Clean Dark (spark) Spread} = (P_e - P_c \ (1 / (F_c \ E_c)) \ E_x - C_p \ I_c)$$

Where:

P_e = Price of electricity, €/MWh, data using German calendar 2020 baseload power contract from EEX exchange

P_f = Price of coal (gas), $, data using Calendar 2020 API2 coal (Calendar 2020 TTF gas)

F_c = Coal (gas) Factor, MWh/tonne of fuel, assumed constant across plants and taken from Platts[21]

E_c = Efficiency of coal (gas), assumed constant across plants and taken from Platts

E_x = Exchange rate, €/$, taken from www.xe.com at 00:00 at the end of each day

C_p = EU allowance price, €/EUA, December 2019 futures settlement price at the end of each day from ICE Futures

I_c = Carbon intensity of coal (gas), assumed constant across plants and taken from Platts

This indicator is therefore highly sensitive to a number of parameters. First, it is important to understand that it is not only specific to countries, but also to each individual power plant, because electricity generation depends on the quality of the coal or lignite used and the efficiency of the plant. In addition, companies buy solid fossil fuels from various suppliers around Europe, and the prices vary both across time and between companies.

In addition, foreign exchange rates can play a role in the profitability of coal power plants, because while EU allowances and electricity in Europe are priced in euros, coal is priced in dollars, which means that a stronger dollar relative to the euro will reduce profitability.

Hedging

Because there are so many fluctuating market parameters which determine the level of the clean spread, companies will resort to so called hedging strategies to reduce the financial risk they are exposed to.

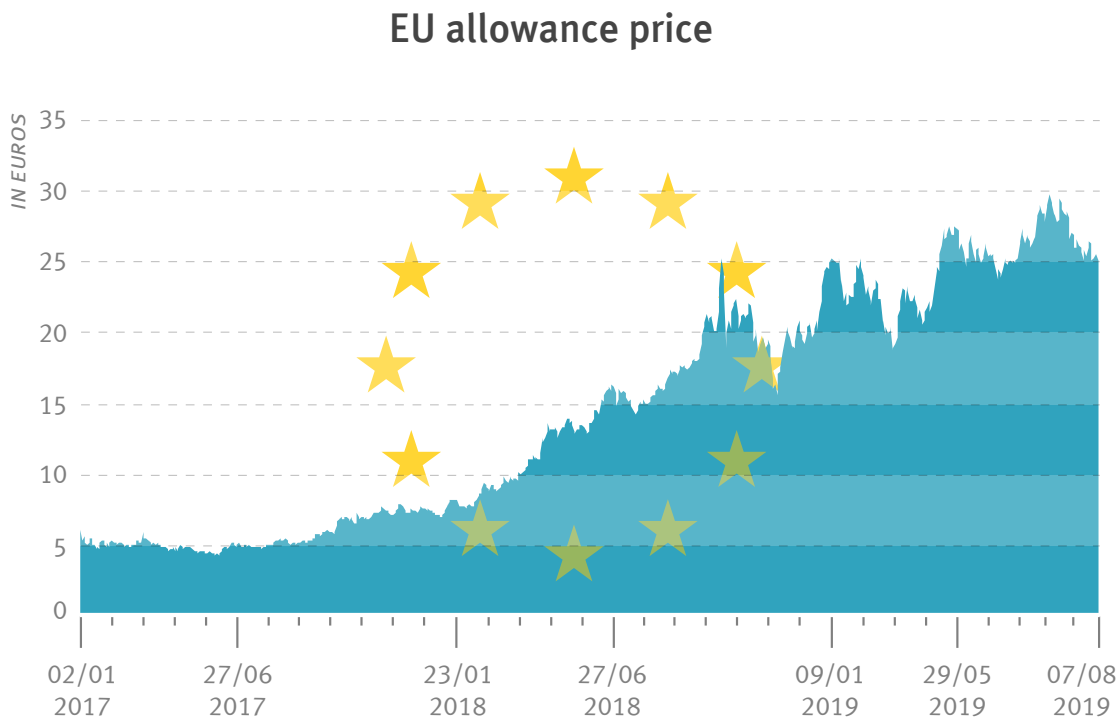
Companies tend to “hedge” the factors which define the spread. This means that, when the spread is particularly high, they will make investments in all its components to ensure stability at this price level for a certain period. For example, when the clean spread is high, companies will resort to buying extra emission allowances. This will increase the cost of allowances, which in turn decreases the spread. Hence there is a dynamic feedback loop; low allowance prices mean higher profitability, which increases hedging, which increases allowance prices.

As the power sector decarbonises and moves towards a 100% renewable energy future, there will be less hedging of emission allowances under the EU ETS in the future. This is because the lower a plant’s emissions, the fewer allowances it needs to buy pre-emptively for hedging purposes.

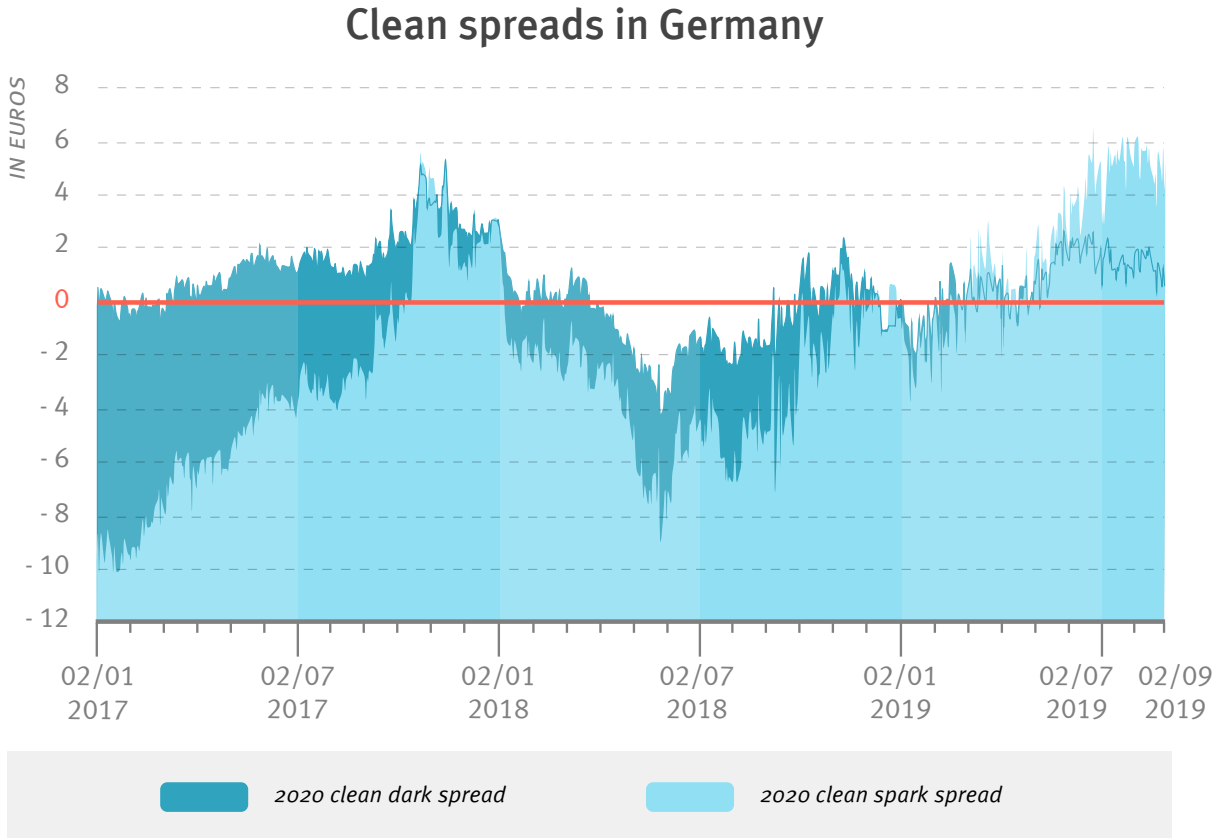
21 *The energy conversion factor, efficiency rate, and carbon intensity can vary between plants, and data is not publicly available because of its commercial value. We have based our calculations on recommended values from Platts methodologies.*

2.2.3 Historical impact of the EU ETS on coal power plants

EU allowance prices were very low between 2009 and 2018, when they suddenly rose following the ETS' phase four reform. What impact has this rise had on coal profitability in Europe?



Looking at Germany, both the clean dark spread (CDS) and the clean spark spread (CSS) have been in negative territory for most of 2018. Comparing the CDS to the CSS, it appears that while there were only 118 days (28% of working days between 1st January 2018 and 6th of September 2019) when it was cheaper to operate gas plants than coal plants, this has become an increasingly frequent situation as EUA prices continue to rise.



Several lessons can be drawn from this. First, it is clear that despite a significant increase in carbon prices in the EU, this was not sufficient to spur a significant fuel switch from coal to gas nor to make coal power plants durably unprofitable. This highlights both the fact that carbon prices are still too low to truly incentivise decarbonising the power sector, and that installations' profitability (measured by the spreads) depends on a range of factors, of which carbon prices are only a part.

Second, it shows that both coal and gas-fired power plants ran at a loss for a significant amount of time since early 2018[22]. Various factors could explain why this still makes economic sense for these plants. It could be because companies have to deliver on agreements through which they committed to producing a certain amount of electricity at a fixed price. In addition, many coal plants around Europe still enjoy significant public subsidies, precisely because governments are paying a premium to ensure the security of supply, i.e. commit to purchase electricity at a certain price over a long period of time. Currently, ten countries are responsible for 84% of Europe's energy-related greenhouse gas emissions, and provide (together) around €6.3 billion per year in subsidies to coal power generation[23].

22 *Although we have used the most accurate data available, estimation of the spreads necessarily requires to make certain assumptions, in particular because each plant in Europe has a specific profit margin, which depends on the plant-specific efficiency, the price at which it purchases coal, etc. The values we report in this guide reflect our best estimate of these parameters. Data sources are in section 2.2.1. Data is available upon request.*

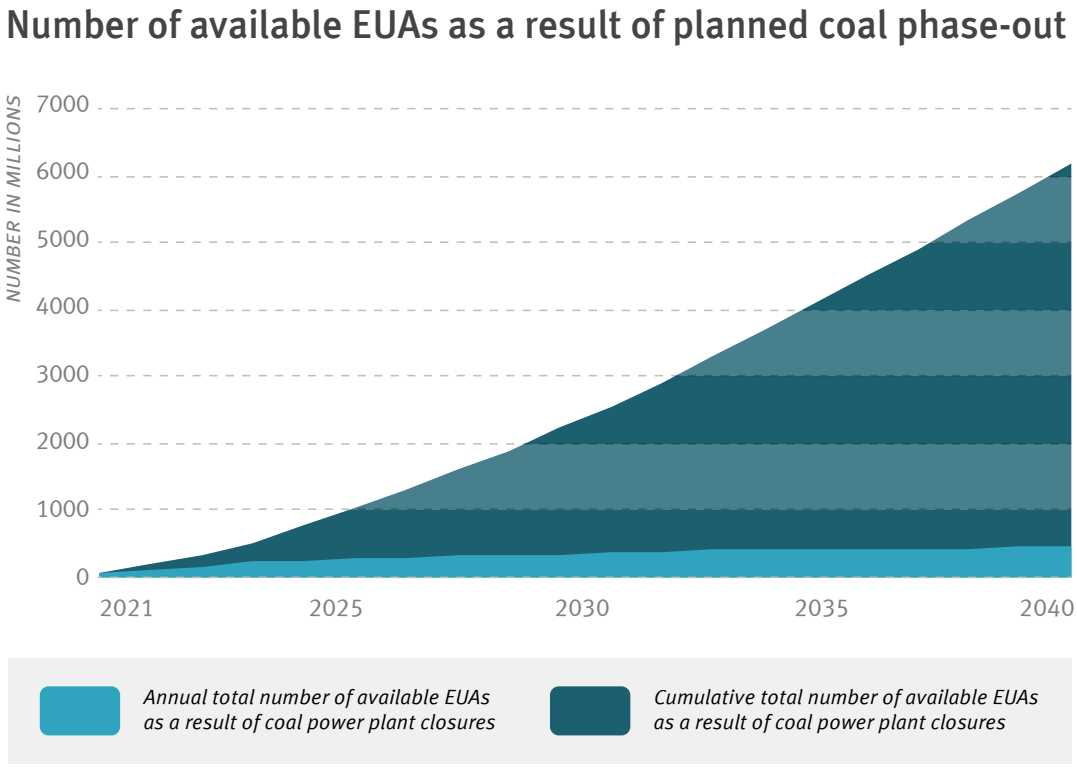
23 *ODI (2017): "Cutting Europe's lifeline to coal: tracking subsidies in 10 countries", available here*

Part 3: Reconciling the EU ETS and the coal phase-out

The relationship between the EU ETS and the European coal phase-out is two-directional. Not only does the EU ETS support the fuel switch, but taking coal power plants off the grid also affects the ETS, and could even lead to an increase in overall emissions in the EU.

Given that the ETS cap is fixed (i.e. decreasing, but by a fixed annual amount of EUAs), declines in emissions lead to more available allowances on the market. If a coal power plant closes, the allowances it would have used will still be on the market, and hence available for others to buy. The overall impact on emissions could, theoretically, be zero. In reality, the situation is more complex, in part because the market is currently oversupplied, and therefore a new allowance being available will not necessarily translate into a new tonne of CO_2 being emitted.

Looking only at countries which have already adopted a coal phase-out date, current closure plans would lead to around 2.22 billion unused allowances over 2021-2030, and 3.96 billion over 2031-2040. That is a total of 6.18 billion available allowances as a result of the planned coal phase-outs over the next 20 years. This represents more than three and a half years of current emissions from all installations under the EU ETS (industry, power and aviation combined).



This additional influx of allowances will increase the absolute number of allowances absorbed by the market stability reserve, but it will be too large for the mechanism to be able to cope with, unless it is strengthened. Several market projections[24] show that the total surplus of allowances will start to increase again after 2023, when the MSR withdrawal rate is foreseen to be lowered back to 12%. This implies that the current design of the MSR is not fit for purpose, and the EU ETS risks again to become oversupplied with allowances. This would cause another crash of the carbon price.

Therefore, without additional measures to avoid or cope with such new oversupply, phasing out coal in certain countries could make it harder for other countries to follow on the same path, since the unused allowances would lower prices, making the remaining coal and lignite plants around Europe more profitable.

24 *ERCST (2018), 2019 State of the EU ETS report*

Governments will need to act both at national and EU level in order to protect the effectiveness of Europe's carbon market in the context of the coal phase-out.

3.1 Strengthening the Market Stability Reserve

In order to maintain the MSR as an effective system to control the oversupply in the market and to cope with the influx of allowances resulting from the coal phase-out, the intake rate should be increased to 36% from 2024 onwards[25].

Furthermore, to reflect the evolving trend of decarbonisation in the power sector, the MSR thresholds should be updated regularly, as hedging requirements from the power sector decrease (see box above, "hedging"). While some surplus is needed on the market to allow power utilities to hedge their future allowance needs, the number of allowances needed for this should decline over time as the power sector decarbonises. This means that also the MSR threshold must decline in order to ensure that only the minimum amount of surplus necessary is kept on the market. The rate at which the thresholds decline could be set to correspond to the linear reduction factor (which should be set no lower than 4.2%), or in line with the average year-on-year emissions reduction rate of the power sector, which was around 4% for the period 2012-2018.

EU governments should also agree to a cancellation of all allowances held in the MSR for more than five years.

3.2 Cancelling EUAs in line with the closure of ETS installations

At the same time, countries should make use of the EU ETS article 12.4 provision that allows them to cancel allowances in line with the closure of power plants. One of the main challenges with this approach is the potential for "opportunity costs" for countries which decide to cancel allowances. Concretely, cancelling allowances would mean not auctionning them, which means forgone revenues for national governments. However, there are several arguments to be made in favour of cancellation.

First, the net impact of not auctioning the unused allowances is not simply the price of an allowance multiplied by the number of allowances. Were the allowances to be auctioned, this would increase supply relative to demand, which would reduce prices, and hence reduce revenues for all the other allowances auctioned by the country.

Second, it is important to keep in mind that the choice faced by national governments is not between "receiving auctioning revenues" and "not receiving auctioning revenues". European countries have committed themselves to meeting climate targets by 2030 and beyond. It is clear that they will have to invest in reducing their emissions. Many governments have generally favored the ETS over other, more direct policies, because the ETS incentivises least-cost abatement first. If countries decided to auction the unused permits, this would weaken the ETS price, and lead to fewer emission reductions. This shortfall in emission reductions would need to be compensated for by investing in other areas, potentially more direct forms of regulations. It is nearly impossible to accurately estimate what the net budgetary impact would be, but it is certain that there will be extra costs associated with having to fill the gap left by a weakened ETS if allowances are allowed to flood the market and crash the prices again.

Finally, it is important to remember that the EU ETS is a climate policy. The fact that it can generate revenues to invest in climate action is a great strength of the system, and should be reinforced by phasing out free allocation. However, it was never meant as a revenue raising tool, and its very objective of reducing emissions to zero will lead to reducing revenues to zero as well.

Therefore, countries can and should cancel allowances which are no longer needed. Currently, the ETS directive only allows this in the context of power plant closures, but this should ideally be extended to any ETS covered installation.

25 *Graichen, Verena; Graichen, Jakob; Healy, Sean (2019): The role of the EU ETS in increasing EU climate ambition: Assessment of policy options. Sitra Studies 161, Helsinki, Finland*

Part 4: Conclusions and policy recommendations

While the EU ETS contributes to the coal phase-out, it cannot deliver it without additional policies. However, it can help reduce the cost of a government-mandated phase-out. In addition, the ETS itself is affected by the shutdown of coal power plants, which leaves vast amounts of unused allowances on the market.

The EU Commission should propose to:

- Increase the MSR intake rate to 36% from 2024 onwards
- Adopt a declining threshold for the MSR to improve its effectiveness
- Set an automatic cancellation for allowances held in the MSR for more than five years
- Broaden the scope of article 12.4 of the revised ETS directive to allow national cancellation of allowances reflecting the closure of any ETS installation
- Increase the Linear Reduction Factor (LRF) to 4.2%

EU Member States should:

- Adopt a coal phase-out plan to stop burning coal and lignite for electricity by 2030
- Commit to cancelling allowances in line with the closure of power plants

Based on data analysed by Alessandro Vitelli of Carbon Reporter.
Power plant data from 'Europe Beyond Coal: European Coal Plant Database, 12 Jul 2019'
Full data available upon request.

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Supported by

The Minor Foundation
for Major Challenges

This project action has received funding from the European Commission through a LIFE grant. The content of this section reflects only the author's view. The Commission is not responsible for any use that may be made of the information it contains.